

Information Literacy in Rural Community

An Alternative Information Literacy Model in Development Countries

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ABSTRACT

Information literacy is a set of competencies such as how to find, use and evaluate information effectively. Information literate people is people who know when they need information, and able to identify, locate, evaluate, organize, and use information effectively to address and help resolve personal, job-related, or broader social issues and problems. In 2013, UNESCO reported the rate of adult literacy among several countries in Asia. It is likely that the adult literacy rate had growth 5% in 2015. However, the current body of literature has shown a dramatic increase in those percentages. Nowadays, information literacy instruction has been adopted in many contexts (health, environmental, education, politic, etc) and the condition of people in rural communities less literate than the urban communities. The aim of this paper was to discuss the appropriate model of information literacy in rural communities. This study assists them to use information in regard to environmental problems, increase their economic value, and rise up their social welfare. This study is based on action research approach. Results showed that information literacy model facilitates improvements in the social welfare through collaboration between community and government along students' participations. The study suggests that collaboration in social welfare is very important and the application of information literacy can help the society to minimize the knowledge gap for their environmental problem-solving and sustainability.

Keywords: *information literacy, rural communities, environment, collaboration*

I. INTRODUCTION

In Indonesia, recorded numbers of disaster incidents until May 2017 show that flood is ranked first at 451 numbers with 203,665 houses are inundated as the impacts [1]. One of the main causes of the flooding is trash in the waterways, thus blocking water flow. It is also supported by the community's unawareness on environmental issues, the rare presence of landfills, shallow rivers, and low soil contour conditions. These conditions indicate a gap in knowledge experienced by villagers in rural area. The existence of people lacking awareness shows that in Indonesia there is still illiteracy in groups of adults with literacy levels influenced by economic status; the family expenses, sex, and place of residence [2].

That phenomenon is related to literacy for to solve it requires considerable knowledge of it. Information literacy generally focuses only on the use of information in the academic environment, but nowadays the information literacy extends into many contexts. One of the contexts is environmental literacy and adult literacy. Rural communities in Indonesia often depend on nature conditions. Sudden nature changes oblige people to update their knowledge of environmental literacy and behavior toward their environment. But rural communities, in fact, have lower literacy than urban communities [3].

Environmental literacy is a form of concern from the people to their environment. Environmental literacy can

improve communities and society creativity through their environment, particularly in Asia rural area with fluctuating natural conditions change which requires a considerate level of environmental literacy [5]. Haverkos & Boutista are the ones who reveal the importance of environmental literacy to be implanted into the society [6]. This brings this paper into the further discussion related to the three literary contexts mentioned before.

This paper examines the model of information literacy that can be planted in the rural community. The literacy models used leads to environmental literacy with the aim of solving environmental problems, increasing economic value, and rise up their social welfare. The environmental literacy program named with *kampung sehat* or healthy village. In addition, our goal is to build a flexible model of information literacy that can be applied in rural communities, especially in developing countries. We look forward to providing benefits with the implementation of environmental problem solutions that have been provided through this environmental literacy program.

II. LITERATURE REVIEW

Literacy has been introduced since the 1960s when literacy was identical with information skills. In the information age, literacy becomes a global competency. The increasing production of information requires the people to be literate in using the obtained information. The presence of literacy is the solution to face challenges and impacts of globalization.

A. Information Literacy

The presence of information literacy is a form of information resources proliferation and its diverse access methods [7]. ALA defines that to be information literate, each individual must be able to know when information is needed, have the ability to locate, evaluate, and use the information effectively [9]. Mackenzie in Lau said that a person can be considered as literate if having these characteristics:

- Prospecting, ability to find relevant information, filtering, sorting, and selecting information.
- Interpretation, ability to interpret data and information into knowledge, insight, and understanding.
- Create new ideas, developing new insights. [8]

This way it can be assumed that information literacy is the knowledge and skills to deal with the proliferation of information resources by knowing the needed information and having the ability to locate, evaluate, interpret, create new ideas, and communicate ethically.

Nowadays, information age provides opportunities and challenges for the future of society in all sectors. Doley argues that information literacy becomes topic that provides means to bring revolutionary change, which is evolutionary transition, in the economic and education [10]. In addition to the economy and education, information literacy has entered a variety of contexts such as health, environment, politics and others. In health context, Guntzviller *et al* conducted research related to the interaction between social cognitive theory, self-efficacy, and capability to predict native Spain behavior living in United States who has low income and English usage ability in preventing sickness. The result is that the combination between confidence and the literacy skills is needed to apply healthy lifestyle behavior [11]. In China, Li's research shows that education of health literacy in rural areas with very few villagers know health literacy will increase their health literacy level and provide important skills in improving their health issues [3]. Thus, it can be concluded that information literacy has occurred in various disciplines in which it can improve society literacy skills to engage them to be critical of any information.

B. Environmental Literacy

The ability of each individual to behave well in their daily life by using his understanding of the environmental conditions is called the environmental literacy. Environmental literacy is not a new discipline or even a new concept in assessing human relationships to the environment. This is a simple thought that departs from the physical determinism, physical possibilism, or even

an anthropocentrism view. Physical determinism is the view that nature has provided everything human needs to live and human beings strive to be in line with existing environmental conditions. In this case, the human does not have many alternatives to determine his role in the environment in which they live. As with physical possibilism, humans have so many possibilities and alternatives to minimize shortcomings of existing environmental conditions. In other words, humans can think and work hard on how to overcome the limitations that nature provides.

Although this term has been widely discussed, there is no generally agreed definition. The initial definition of environmental literacy put forward by Roth says that environmental literacy is the ability to understand and interpret the environment which then brings to take action to repair, restore, or maintain the environment [12]. Finn & O'Fallon says that improving and applying environmental literacy will benefit the community and rural communities and increase environmental awareness for both the individual and the community itself [13]. Haverkos & Boutista concluded that environmental literacy is crucial today; environmental literacy refers to the importance of knowledge and attitudes in understanding environmental issues to make decisions through responsible and sustainable actions [6].

Some experts mention the basic framework of environmental literacy that consists of environmental awareness, knowledge of personal behavior, and real environmental literacy [14].

1) Environmental awareness

NEETF/Roper study found that about 50%-70% of adults have heard environment-related words such as air and water pollution, energy efficiency, solid waste, habitat loss, and climate change. Environmental awareness is a condition of a person familiar with the environment and has an understanding of cause and effect for the environment. The study shows that environmental awareness by itself has an influence on environmental management behavior and environmentally friendly behavior. Environmental awareness of the community will help the government in environmental policy making and management.

2) Combination of awareness and action on the environment

The combination of awareness and action encourages people to take personal actions that directly contribute to environmental improvements such as saving electricity, gasoline, and water, buying "green" products (including seafood choices), reducing solid waste, and so on. It is called the knowledge of "personal behavior" because, unlike environmental awareness, people willingly go further to take personal action and make connections

between environmental issues and their own individual behavior. Experienced people in environmental knowledge level are more likely to engage in private environmental action by taking direct action or campaigns such as energy savings, water, and reducing healthcare costs. Thus, in addition to be environment aware on society level, individual must also take action on awareness to the environment.

3) *Environmental Literacy*

Environmental literacy has a deeper scope than the previous two basic frameworks. Environmental literacy not only focuses on environmental information knowledge but also involves the basic principles of environmental awareness. Then on the skills required to investigate environmental issues and understanding on how to apply that information.

White, Hall, & Johnson studied the U.S community on environmental issues in which 56% of the population left domestic waste not on the right place. The study resulted an educational program related to domestic waste management and the importance of environmental management to the community [15]. Ramirez-Andreotta, et al. found that community concern and understanding community information needs in improving environmental literacy have already changed in waste management and with environmental literacy enhancing environmental knowledge and environmental awareness, a sense of control, and the ability to make decisions appropriate to the existing environment [16].

C. *Adult Leadership Literacy*

Everyone has an influence on the environment at home, workplace, and community. However, research conducted by Coyle showed that leaders in business, government, and society do not have the basic knowledge about the environment and often ignores environmental impacts and opportunities or overcome solely through intuition [14]. Community leaders, in particular, need to be environmental literate for their literacy is vital to the development of environmental literacy through policies and decisions that are influencing society. The policy can exist in from land development policy to education waste disposal. Adults should make informed decisions about the environmental impact of their decisions. Adult literacy is the ability to conduct literacy to the problems faced daily [17]. Adult literacy rate relies on how owned information accessed and participation by an adult in its primary education. Hamilton & Pitt says that adult learners are a priority group. Thus, adult literacy is very important to be increased because it can affect the child literacy.

Barakat measured changes that occur in literacy of women aged 20-49 from 30 countries and the result is with the presence of appropriate literacy program, a

significant increase of the subject to the level of the woman can be said to be literate [17]. While Post did research with a sample of 166,000 adults aged 16-65 in 24 countries on 2008 and 2014, the research resulted that with an integrated literacy in adults can contribute to the social welfare and positive transformation that can be done by adults [18]. These studies show that adult literacy can improve knowledge so that the society become more literate and contribute to social welfare and transformation. In addition, the increase in adult literacy, especially in communities in the marginal category based on research from Akello, Lutwama-Rukundo, & Musiimenta with 45 respondents, has found that adult literacy is most effective when conducted through dialogue in changing social and economic actions [19]. While in this paper, it does not only promote a dialogue to increase literacy in adults and village communities, but there are several formulations and stages have been studied that can increase adult literacy in rural communities.

D. *Rural Community*

Community comes from the Latin word "cum" which means togetherness and "munus" which means giving each other. The community is where people define an important social bond in building an identity, practice, role, in an institution such as family, home, work, government, and more broadly [20]. Wenger defines the community as a set of individuals who share issues, concerns or passions about a particular topic and deepen their knowledge and expertise with continuous interaction [21]. It can be said that the community is individuals who form a group based on their similarity and interest to a particular topic along with the social interaction that occurs within the group which can deepen their knowledge and skills.

The rural definition for decades has not been agreed on. In this paper, the rural community is a community that is located in an area far from the city and has lower access than the city in terms of health, technology, and others. All age groups, including adult, should be able to learn and continue learning through a variety of flexible ways of learning so their literacy can leads to sustainable development [22].

Information literacy is needed in the rural community. More specifically, environmental literacy needs to be assessed and applied to the rural community for assessing the environment and treating their environment. The importance of the application of health literacy in rural communities emphasizes how environmental literacy can improve the economy, health, social welfare which also affects the rural people's live.

III. METHODOLOGY

To find out how literacy program is implemented in the rural community, this research used action research approach. Action research is a research method that takes a problem-solving framework. Denscombe explains that action research have the goal of providing problem-solving and making subsequent implementable guidelines led by individuals and teams, collaborating between teams and groups concerned to improve the way they identify and resolve problems [23]. In its application, this action research goes through several stages: diagnosing, action planning, action-taking, evaluating, and learning which in turn consider future action [24].

Participants of this research are the people of Sumberejo village, Sidoarjo, East Java. Implementation of each activity followed by 50 adults of the villagers. The age of the citizens who received this action between 30 to 45 years and over. The literacy program is given in the form of environmental literacy with the name of the healthy village that runs for 5 months. It was also emphasized that research using collaborative action research has focused on increasing the level of local knowledge in a community [25] by establishing the principle of a relationship and shared responsibility. Collaboration has done in this research between student, government, and community. The collaboration is very important to rise up the social welfare and the application of the information gap for their environmental problem-solving and sustainability.

IV. DISCUSSION

A. Information Literacy in Rural Community: the healthy village program in Sumberejo, Sidoarjo

The Healthy Village Program is an initiated program based on the social and environmental condition in Sumberejo which targeted the adults. The presence of The Healthy Village Program becomes an alternative solution of the problem. The program provides a comprehensive solution, namely socialization: an environmental literacy, implementation: creating a product based on environment and social problem, socialization: how to market product, and evaluation. Therefore, the implementation of information literacy model assists them to use information in regard to environmental problems, increase their economic value, and rise up their social welfare. Here's a picture of the model,

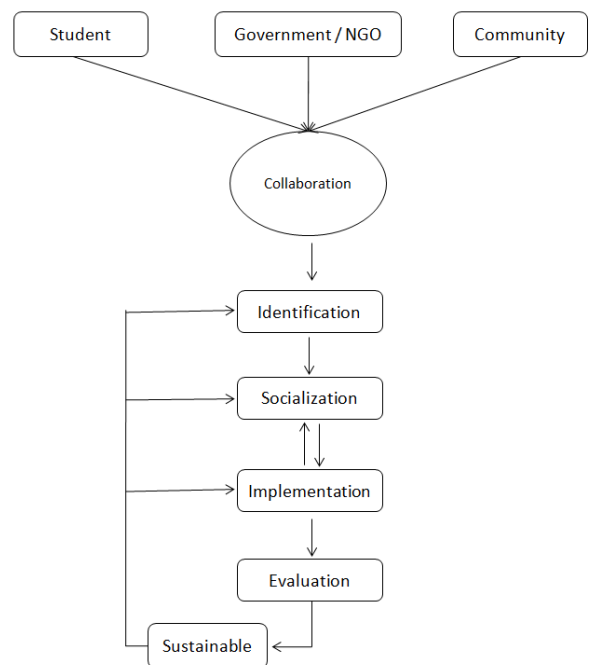


Figure 1. Information Literacy Model in rural community

1) Identification: social setting

In Indonesia, recorded numbers of disaster incidents until May 2017 show that flood is ranked first at 451 numbers with 203,665 houses are inundated as the impacts [1]. While the impact of floods occurred in Sidoarjo in 2016 that thousands of homes inundated for 2 to 10 days [26], and Sumberejo is one of the areas that often prone to flooding [27]. One of the main causes of the flooding is trash in the waterways, thus blocking water flow. It is also supported by the community's unawareness on environmental issues, the rare presence of landfills, shallow rivers, and low soil contour conditions. These conditions indicate a gap in knowledge experienced by villagers in the rural area. The existence of people lacking awareness shows that in Indonesia there is still illiteracy in groups of adults with literacy levels influenced by economic status; the family expenses, sex, and place of residence [2].

2) Socialization: an environmental literacy

The environmental literacy is the ability to understand and interpret the environment which then takes action to improve. [12] Socialization of this program collaborate with The Environmental Agency as known as *Badan Lingkungan Hidup (BLH)* of Sidoarjo and the Department of Hygiene and Gardening as known as *Dinas Kebersihan dan Pertamanan (DKP)* of Sidoarjo. The socialization aimed to provide knowledge and understanding related to environmental literacy to the community. The advantages of environmental literacy are to increase environmental awareness both for the

individual and the community [13]. The education includes maintenance and management of the environment, such as the domestic waste segregation process, the manufacture, and maintenance of biopori. The results of socialization conducted have an impact on increasing public awareness of the environment such as separating domestic waste and initiating the community to utilize domestic waste into economic value. Coley's research result shows that environmental awareness has an effect on environmental management behaviors and eco-friendly behaviors [14]. Haverkos & Boutista concludes that environmental literacy is crucial, where environmental literacy refers to the importance of knowledge and attitudes to understanding environmental issues to make decisions through responsible and sustainable action [6].

3) *Implementation: create product based on environment and social problem*

Coley argued the combination of awareness and action encourage people to take personal actions that directly contribute to environmental improvements such as save electricity, gasoline, and water, buy "green" products (including seafood choices), reduce solid waste, and so on [14]. In the implementation stage of the healthy village program, the rural community applied the results of the socialization in the previous stage, the programs of implementation are:

- Biopori Production and Instalation

Biopori production and installation can be considered as a solution to solve environmental problems such as floods. Biopori installation can absorb the water effectively when the flood comes. It also minimizes the possibility of a flood. The preparation and maintenance of biopori are directly guided by the Environment Agency (BLH) of Sidoarjo.

- Creating Community Creativity

Implementation of socialization and training of waste regulation cooperate with the Department of Sanitation and Gardening of Sidoarjo. The subject of this action is the housewife who is a member of Family Welfare Foster as known as *Pembinaan Kesejahteraan Keluarga (PKK)* in Sumberejo Village. They encouraged to collect plastic domestic waste such as bottles, plastic bags, etc. The instruction as a form of follow-up in applying the education related to waste segregation. For the next step, domestic waste is processed into compost and handicrafts that have economic value. Handicrafts made such as brooches and hanger hoods. In addition, they do the packaging process for their final product.

White, Hall, & Johnson studied the U.S community on environmental issues in which 56% of the population just left domestic waste [15]. This research resulting educational programs related to the importance of domestic waste and environmental management to the community. The implementation stage in the manufacture of products based on the environmental and social problems of the rural community. Assistance is one of the factors that support the success of these communities. This is also stated by Ramirez-Andreotta, et al. that the concern and understanding of information of the community in improving environmental literacy have already changed in waste management [16].

4) *Socialization: how to market product*

The marketing product socialization of creativity community as a form of sustainability of waste processing that has been implemented. This activity collaborates with The Department of Industry and Trade Sidoarjo. The goal is to provide entrepreneurial insight to the local community such as how to do marketing effectively and efficiently and how to build the future strategy for their business development. So that people can market the products that have been made and can be a new business opportunity for local housewives. Product sales results can be an additional income to sustain their economy. In this case, the rural community already knows how the business development process, where they can also implement on other business products.

5) *Evaluation*

This stage is to assess the success of The Healthy Village Program into information use in regard to environmental problems, increase their economic value, and rise up their social welfare. The leaders in business, government, and society do not have basic knowledge about the environment and often ignore environmental impacts and opportunities or cope solely through intuition [14]. In the other side community leaders, need to be environmentally literate because they are the important role in the development of environmental literacy through the policies and decisions that affect people. At the evaluation stage, the formation of environmental community for the sustainability of The Healthy Village Program as a force in managing the environment. The environmental community established from the rural communities.

The implementation of information literacy model in rural communities with applied the healthy village programs that based on environmental and social issues provides a means to minimize knowledge gaps in the completion process. Akello, Lutwama-Rukundo, & Musiimenta explained that increasing adult literacy, especially in marginalized societies, that adult literacy is most effective when conducted through dialogue in

changing social and economic actions [19]. The information literacy model in rural community comprehensively designed not only in dialogue but also providing solutions how environmental literacy can improve the economy, health, social welfare which then also affect the lives of villagers. As in China, in the rural area, people does not aware about health literacy and through education related to health literacy will increase their level of health literacy and provide essential skills in improving their health issues [3]. As a form of building habits in using information appropriately, they are not advised to doubt in transferring such knowledge to different contexts where it has the same value.

V. CONCLUSION

Many literacy programs have been implemented in various contexts. Basically, the literacy activities have applied in rural communities must follow the characteristics and needs of the rural communities. Some researchers have conducted literacy programs, one of them used a dialogue that gives effective results in changing social actions and economic. The Healthy Village Program is an applicative literacy program that can be applied in environmental literacy learning in rural communities. The information literacy model is comprehensively designed based on environmental and social issues in Sumberejo Village. This model has several stages of identification, socialization, implementation, and evaluation of sustainability program. The implementation of information literacy model in rural community facilitates improvements in the social welfare through collaboration between community and government along students' participations. The collaboration in social welfare is very important and the application of information literacy can help the society to minimize the knowledge gap for their environmental problem-solving and sustainability.

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